UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,054	07/29/2003	Tomoaki Hirayama	9683/157	5919

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EXAMINER
APPIAH, CHARLES NANA

ART UNIT	PAPER NUMBER
2686	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _29 July 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-14_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-14_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Double Patenting

1.   Claims 1, 2, 9, 13, and 14 are rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claims 1-3 of U.S.

Patent No. 6,658,257. Although the conflicting claims are not identical, they are not

patentably distinct from each other because the claims of the instant application are

broad enough to be encompassed by the claims of the patent and as such it would have

been obvious to one of ordinary skill in the art to implement the claims of the instant

invention using the claims of the patent in order to allocate frequencies for high quality

communications.

Claim Objections

2.   Claim 1 is objected to because of the following informalities: It appears "share"

on line 4 should be changed to "shared" in order to correct an apparent typographical

error.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1, 2, 8-12, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by **Kotzin et al. (5,708,969).**

Regarding claim 1, Kotzin discloses a frequency allocation method in a cellular radio communication system wherein a plurality of carriers provide radio communication services in overlapping service areas: designating respectively allotted frequency bands of a shared predetermined frequency band to each carrier, each frequency band having a plurality of communication frequency bands (assignment of two group spectra or complementary frequency spectra, first and second spectrum (X and Y), see col. 4, lines 5-36), and allotting within the frequency bands allotted to each carrier, adjacent frequency bands which are adjacent to frequency bands allotted to other carriers to low power communications and non-adjacent frequency bands which are not adjacent to frequency bands allotted to other carriers to high power communications (allocation of frequencies to high powered transmissions and low-powered transmissions including assignment of similar power levels to adjacent frequencies to which ensures adjacent channel interference being minimized, col. 2, lines 26-67, col. 5, line 66 to col. 6, line 61).

Regarding claim 2, Kotzin further discloses wherein the high power communications comprise communications performed by high power mobile stations, and the low power communications comprise communications performed by low power communications (see col. 4, lines 49-64).

Regarding claim 8, Kotzin further teaches allotting the non-adjacent frequency bands including a communication band being the highest and a communication band being the lowest in a frequency band corresponding to low power communications (see col. 4, lines 37-64).

Claim 9, which recite the system for implementing the method steps of claim 1 is rejected for the same reasons as set forth for claim 1 above.

Regarding claims 10 and 11, Kotzin's teaching of a base station site as illustrated in Fig. 2 and inherent mobile communications switching stations (resource controller 52) meet the limitation of base stations installed by each carrier comprising the frequency allocation means (see col. 3, lines 8-39).

Regarding claim 12, Kotzin further shows mobile stations and base stations performing exchange of radio signals by means of a CDMA system (see col. 3, lines 28-39).

Claim 13 is rejected for the same reasons as set forth in the rejection of claim 1 above.

Regarding claim 14, Kotzin discloses a frequency allocation method for a radio communication system wherein a plurality of carriers provide radio communication services in overlapping geographical areas (see Fig. 1), using respectively allotted frequency bands each allotted frequency band having a plurality of communication bands (see col. 3, lines 1-67, and assignment of two group spectra or complementary frequency spectra, first and second spectrum (X and Y), see col. 4, lines 5-36), the method comprising: within the frequency bands allotted to each carrier, allotting non-

adjacent frequency bands, being a communication frequency band which is the highest,

and a communication frequency band which is the lowest in the frequency band

corresponding to that carrier, to low power communications (allocation of frequencies to

high powered transmissions and low-powered transmissions including assignment of

similar power levels to adjacent frequencies, which ensures adjacent channel

interference being minimized, col. 2, lines 26-67, col. 5, line 66 to col. 6, line 61). See

also, col. 4, lines 14-64, col. 7, lines 7-33).

Claim Rejections - 35 USC § 103

5.   Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kotzin et al as applied to claim 1 above, and further in view of **Laborde et al.**

(5,857,154).

        Regarding claims 3 and 4 Kotzin as illustrated in figures 3 and 5 the radio

communication system comprising cells within which high and low power

communications are performed. Kotzin further discloses the assignment of spectral

resources based on signal strength measurements as a quality parameter in assigning

resources to at least a first spectrum power level and a second spectrum power level

(see Fig. 8). Kotzin, however, fails to explicitly teach wherein the communication

system comprises macrocells and microcells, with high power communications including

communications performed by the macrocells while the low power communications

include communications performed by the microcells.

Laborde discloses a communication network (see Fig. 1) made up of a low tier section (microcell) and a high tier section (macrocell), and in which the low tier sections performing communications with relatively low power while the tier section communicates with relatively high power (see col. 2, lines 30-62).

It would therefore have been obvious to one of ordinary skill in the art to implement that frequency allocation system of Kotzin in a communication system having macrocells and microcells as taught by Laborde in order to ensure the effective utilization of available resources such as frequencies with minimal adjacent channel or frequency interference.

Laborde further suggests that the high tier section compared to the low tier section is also characterized by high transmit power and low voice quality. But the combination of Kotzin and Laborde fail to explicitly teach wherein the high power communications comprise communications with a high demand quality and the low power communications comprise communications with a low demand quality.

Examiner takes Official Notice that the use of high power communications for high demand quality communications and low power for low demand quality communications is very well known in the art and as such it would have been obvious to one of ordinary skill in the art to provide desired communications in the system of Kotzin and Laborde while taking demand quality into consideration in order to ensure proper and effective assignment of available resources for communications in a dynamic manner.

6.   Claims 5, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Kotzin et al** as applied to claim 1 above, and further in view of **Bodin et al.**

(5,542,093).

Regarding claim 5, Kotzin further teaches the use of a means for adjusting the

partitioning of designated frequency spectrum including means for calculating the

loading of the base stations wherein the loading factor is based on data contained in

memory of communication transactions per time frame within the service coverage area

of the base station (see col. 5, lines 18-44), suggesting a relationship between the rate

of use of all frequency bands including non-adjacent frequency bands being allotted for

communications regardless of whether they are high power communications or low

power communications. Kotzin, fails to teach explicitly teach that among the frequency

bands allotted to a carrier, the rate of use of the non-adjacent communication bands is

lower than a threshold value.

Bodin discloses a method of re-distributing calls to extended channel groups

giving consideration to load capacity of the channels in order to reduce congestion in

primary channel groups (see col. 3, lines 1-12). According to Bodin and as illustrated in

Figure 3, the numbers of available channels (rate of use indication), in a first and

second group are compared to a threshold value (steps 304, 306, 307, and 308) and

the group with the most available capacity being selected for communications when the

channels available in a group is below the threshold value (see steps 310, 312). See

col. 4, lines 34-62.

It would therefore have been obvious to one of ordinary skill in the art to incorporate the dynamic channel allocation based on load available capacities of Bodin into the system of Kotzin in order to balance the grade of service for high quality communications.

Regarding claim 6, Kotzin further teaches the use of a means for adjusting the partitioning of designated frequency spectrum including means for calculating the loading of the base stations wherein the loading factor is based on data contained in memory of communication transactions per time frame within the service coverage area of the base station (see col. 5, lines 18-44), suggesting a relationship between the rate of use of all frequency bands including non-adjacent frequency bands being allotted for communications when a mobile communication is initiated., and Bodin teaches that when the number of available channels in the first and second group is not below a threshold, a channel in any group is assigned to a mobile for communications (steps 307 and 309).

The combination of Kotzin and Bodin fail to teach that when the rate of use of the non-adjacent communication frequency bands becomes greater than or equal to the threshold value, re-allotting the adjacent communication frequency bands to communications allotted to non-adjacent frequency bands.

However, since Bodin teaches assigning a mobile to a channel in any group when the available capacity or rate of use is above or equal to the threshold, it would have been obvious to one of ordinary skill in the art to dynamically change the allotting of the communication resources such as (channels or frequency bands) based on the

determined rate of use in order to dynamically balance the use of the available communication resources in the combination of Kotzin and Bodin and thus ensure high quality communications.

Regarding claim 7, Kotzin fails to teach switching the threshold value on a network in response to communications traffic.

Bodin teaches that the threshold value can be set at various levels depending upon the desired characteristics of the communication system (see col. 4, lines 62-68).

It would therefore have been obvious to one of ordinary skill in the art to include Bodin's teaching of setting the threshold value at various levels based on desired characteristics of the communication system in Kotzin as modified by Bodin in order to dynamically control communication resource assignments based on desired system characteristics.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gustafson (5,924,036) discloses a method of increasing system capacity by assigning different frequency bands for a microcell and macro (overlaid) cell structures in a CDMA communication system.

Laborde et al. (5,857,154) discloses a multi-protocol mobile telephone network having high tier and low tier systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Appiah whose telephone number is 571 272-7904. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Marsha Banks-Harold can be reached on 571 272-7905. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

CA

CHARLES APPIAH
PRIMARY EXAMINER